### Section 1 - Product and Company Information

<table>
<thead>
<tr>
<th>Product Name</th>
<th>BENZONITRILE, 99%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Number</td>
<td>B8859</td>
</tr>
<tr>
<td>Brand</td>
<td>Aldrich Chemical</td>
</tr>
<tr>
<td>Company</td>
<td>Sigma-Aldrich</td>
</tr>
<tr>
<td>Street Address</td>
<td>3350 Spruce Street</td>
</tr>
<tr>
<td>City, State, Zip, Country</td>
<td>SAINT LOUIS, MO 63103 US</td>
</tr>
<tr>
<td>Technical Phone</td>
<td>314 771 5766</td>
</tr>
<tr>
<td>Fax</td>
<td>800 325 5552</td>
</tr>
<tr>
<td>Emergency Phone</td>
<td>414 273 3650 Ext. 5999</td>
</tr>
</tbody>
</table>

### Section 2 - Composition/Information on Ingredient

<table>
<thead>
<tr>
<th>Substance Name</th>
<th>CAS #</th>
<th>SARA 311</th>
</tr>
</thead>
<tbody>
<tr>
<td>BENZONITRILE</td>
<td>100-47-0</td>
<td>No</td>
</tr>
</tbody>
</table>

| Formula          | C7H5N      |
| Synonyms         | Benzene, cyan-, Benzenonitrile, Benzenic acid nitrile, Cyanobenzene, Fenylnitril (Czech), Phenyl cyanide |

### Section 3 - Hazards Identification

#### Emergency Overview
- Harmful
- Harmful in contact with skin and if swallowed. Risk of severe damage to eyes. Irritating to skin.
- Combustible.

For additional information on toxicity, please refer to Section 11.

### Section 4 - First Aid Measures

#### Ingestion Exposure
If ingested, immediately call a physician or poison control center. Do not induce vomiting.

#### Inhalation Exposure
- If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

#### Dermal Exposure
In case of contact, immediately wash skin with soap and copious amounts of water.

#### Eye Exposure
- Contamination of the eyes should be treated by immediate and prolonged irrigation with copious amounts of water.

#### Information for Physician
- Contamination of the eyes should be treated by immediate and prolonged irrigation with copious amounts of water.

### Section 5 - Fire Fighting Measures

<table>
<thead>
<tr>
<th>Flash Point</th>
<th>158 °F</th>
<th>70 °C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explosion Limits</td>
<td>Lower: 1.4 %</td>
<td>Upper: 7.2 %</td>
</tr>
</tbody>
</table>

#### Autoignition Temp
550 °C

#### Extinguishing Media
- Carbon dioxide, dry chemical powder, or appropriate foam.

#### Firefighting
- **Protective Equipment**
  - Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
  - **Specific Hazard(s)**
    - Emits toxic fumes under fire conditions.

#### Exposure Hazard(s)
- **Material**
  - Harmful liquid.

### Section 6 - Accidental Release Measures

#### Procedure to be Followed in Case of Leak or Spill

- Evacuate area.

#### Procedure(s) of Personal Precaution(s)
- Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

#### Methods for Cleaning Up
- Absorb on sand or vermiculite and place in closed containers for disposal.

### Section 7 - Handling and Storage

#### Handling
- **User Exposure**
  - Do not breathe vapor. Do not get in eyes, on skin, on clothing.

#### Storage
- **Suitable**
- Keep tightly closed. Keep away from heat and open flame. Store in a cool dry place.

### Section 8 - Exposure Controls / PPE

#### Engineering Controls
- Safety shower and eyewash.

#### Personal Protective Equipment
- **Other**
  - Wear appropriate government approved respirator, chemical-resistant gloves, safety goggles, other protective clothing.

#### General Hygiene Measures
- Wash thoroughly after handling. Remove and wash contaminated clothing promptly.

#### Molecular Weight
- 103.12 AMU

#### pK/a
- N/A

#### BP/VP Range
- 191 °C

#### MP/MP Range
- -13 °C

#### Freezing Point
- N/A

#### Vapor Pressure
- 1 mmHg

#### Vapor Density
- 3.6 g/l

#### Saturated Vapor Conc.
- N/A

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Section 10 - Stability and Reactivity

Stability
Conditions to Avoid
Sensitive to air.

Materials to Avoid
Strong acids, Strong bases, Strong oxidizing agents. Strong reducing agents.

Hazardous Decomposition Products
Hazardous Decomposition Products
Thermal decomposition may produce carbon monoxide, carbon dioxide, and nitrogen oxides.

Section 11 - Toxicological Information

Route of Exposure
Skin Contact
Causes skin irritation.

Inhalation
May be harmful if inhaled

Multiple Routes
Harmful if swallowed or absorbed through skin.

RTECS Number: DI2460000

Toxicity Data
Skin - Rat: 1,200 mg/kg (LD50)
Intraperitoneal - Rat: 740 MG/KG (LD50)
Remarks: Sense Organs and Special Senses (Nose, Eye, Ear, and Taste)/Eye/Ear/Respiration/Acute pulmonary edema.

Oral - Mouse: 971 mg/kg (LD50)
Inhalation - Mouse: 1,800 mg/m3 (LC50)
Intraperitoneal - Mouse: 400 MG/KG (LD50)
Oral - Cat: 600 mg/kg (LD50)
Remarks: Behavioral/Tremor.

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Section 12 - Ecological Information

Acute Ecotoxicity Tests
Test Type
EC50 Daphnia
Species
Daphnia magna
Time: Value:
24.0 h 122 - 155 mg/l

Test Type
LC50 Fish
Species
Leuciscus idus
Time: Value:
96.0 h 54 mg/l

Test Type
LC50 Fish
Species
Pimephales promelas (Fathead minnow)
Time: Value:
96.0 h 78 - 135 mg/l

Test Type
LC50 Fish
Species
Oncorhynchus mykiss (Rainbow trout)
Time: Value:
96.0 h 52 mg/l

Test Type
LC50 Fish
Species
Lepomis macrochirus (Bluegill)
Time: Value:
96.0 h 78 mg/l

Section 13 - Disposal Considerations

Appropriate Method of Disposal of Substances or Preparation
This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

IATA
Proper Shipping Name: Benzonitrile
IATA UN Number: 2224
Hazard Class: 6.1

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Section 15 - Regulatory Information

EU Directives Classification
Symbol of Danger: Xi
Indication of Danger
Harmful.
Risk Statements R: 21/22
Harmful in contact with skin and if swallowed.
Safety Statements S: 23
Do not breathe vapor.

US Classification and Label Text
Indication of Danger Harmful.
Risk Statements Harmful in contact with skin and if swallowed. Risk of serious damage to eyes. Irritating to skin.
Safety Statements In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Take off immediately all contaminated clothing. Wear suitable protective clothing, gloves, and eye/face protection.
US Statements
Combustible.

United States Regulatory Information
SARA Listed: No
TSCA Inventory Item: Yes

Canada Regulatory Information
WHMIS Classification
This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.
D3L: Yes
NDL: No

Section 16 - Other Information

Disclaimer
For R&D use only. Not for drug, household or other uses.

Warranty
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2003 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.